NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS
(CONTU)

Tel: (202) 557-0996 Washington, D.C. 20558

# SOFTWARE SUBCOMMITTEE REPORT
# &
# ADDITIONAL VIEWS

The National Commission on New Technological Uses of Copyrighted Works, in compliance with that portion of its mandate which instructs it to examine questions concerning computer uses of copyrighted works, has designated a Software Subcommittee to prepare a preliminary report concerning the manner in which computer programs should be dealt with by copyright. That report, containing the recommendations of the Software Subcommittee, is herewith presented for public comment. It has not been adopted by the full Commission, which will base its final report to the President and the Congress upon response to this document, further hearings, and the results of several studies now in progress concerning the economic, public interest, and consumer questions associated with the issues before the Commission.

Appended to the report are the individual views of those Commissioners who desire at this time to comment upon the Subcommittee's recommendations.

Written comments or requests for the opportunity to testify on this subject at future Commission meetings should be addressed to Arthur J. Levine, Executive Director, National Commission on New Technological Uses of Copyrighted Works, Washington, D.C. 20558. Requests to appear must be received by August 1, 1977, so that the Commission may plan appropriate hearings early in the fall. Written comments would be welcome at any time but should be submitted by September 1, 1977.

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# REPORT OF THE SOFTWARE SUBCOMMITTEE

# TO THE

# NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS

## I. Introduction

This report contains the recommendations of the Software Subcommittee of the National Commission on New Technological Uses of Copyrighted Works (CONTU) concerning the way in which computer programs should be dealt with by changes in Title 17 of the United States Code (the Copyright law of the United States). These recommendations have not been adopted by the Commission.[1/] They are being circulated at this time in order that written or, when appropriate, oral comments may be made by interested parties so that the Commission will be able to base its final report in this area on the broadest possible foundation.

The Software Subcommittee has sought to determine how to balance important individual and societal interests which conflict with one another to a certain extent. Those interests include the broad dissemination of works of authorship -- here, computer programs; the ability of authors to recover their costs from the distribution of their wares; and the protection of works of authorship against their misappropriation. The Subcommittee submits that these interests can best be balanced with respect to computer programs, as

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1/ Indeed, certain Commissioners are skeptical about the need for any form of protection for computer programs as well as the copyrightability of such works. See Part V, entitled "Postscript."

with all other works of authorship, by affording such works copyright protection.[2/]

The United States Constitution provides that Congress has the power to promote artistic and scientific progress by granting limited monopolies to authors and inventors. Congress has exercised this power by enacting copyright and patent laws. The underlying rationale for such laws is that they provide incentives for the creation and distribution of original works which are of value to society. Copyright law gives moderate protection to the original writings of authors for an extended period of time without regard to the quality of the work. Patent law, on the other hand, gives stronger

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2/ It is interesting to note that after a three-year study, the British Committee to consider the Law on Copyright and Designs, in its report to Parliament, made recommendations concerning computer programs which are very similar to those contained in this draft. Paragraph 520 of that report (known, after the committee's chairman, as the Whitford Report) contains the following recommendations:

1) Computer programs should be treated, for copyright purposes, as literary works.

2) The storage of copyrighted material in a computer memory should be an action over which the copyright owner has control.

3) Programs and data bases should enjoy the same terms of protection as other copyrighted works.

4) Copyright in works produced with the aid of a computer should belong to those who devised the instructions and originated the data which led to that particular result.

5) The unauthorized "use" of a copyrighted program should be an infringement.

The Whitford Committee was unanimous as to the first four recommendations, but there was a division concerning the fifth, with a majority favoring the "use-infringement" result.

protection to certain discoveries of inventors for a much shorter period of time if and only if the federal government is satisfied that the work is useful, novel and nonobvious to those familiar with the related technology. Very broadly, copyright is designed to protect the expression of ideas while patent's purpose is to protect what are generally understood to be inventions -- in a sense the ideas themselves.

In discussing computer programs attempts are often made to explicate various problems by the use of analogies in which the statement "computer programs are more or less like..." is frequently used. Indeed, the Subcommittee has in the past resorted to such devices. Programs, unfortunately or otherwise, are "like" little else. They are, however, writings which set forth instructions or sets of instructions. As simple as this sounds, it bears emphasis: they are not "like" books, paintings, or television sets. They are instructions fixed in a tangible form of expression. As will be discussed in some detail below, they are thus within the ambit of traditional American copyright.

A computer program is a writing which sets forth instructions which can direct the operation of an automatic system capable of storing, processing, retreiving or transferring information. It is an explanation of a process and not the process itself. This distinction between the process and the writing which describes it is of critical importance to understanding how copyright applies to computer programs. With a computer program as with

all forms of creative endeavor, there are three different phenomena:

1) A description of the activity (process);

2) The activity (process) itself; and

3) The results of the activity (process).

Descriptions of a process are protectable through copyright without regard to whether they are narrative descriptions or lists of instructions.[3/] Processes or principles of operation -- indicated by the second category -- are protectable, if at all, through patents or trade secrecy. The copyright status of the results of the activity or process is not dealt with in this report which is concerned only with the copyright status of the computer program. At all events the program is not the process itself but is a writing

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3/ It has been suggested that a program, in object code -- that form of the program which when inserted in the computer activates machine operations -- might be constitutionally uncopyrightable because of its lack of communicative potential. To the untrained reader the object code does seem to lack communicative potential. That could also be said, however, of such clearly copyrightable works as a book in Sanskrit or a mathematical table of numbers. The Subcommittee is strongly of the opinion, that, if lines must be drawn between those forms of programs in which copyright may, and those forms in which it may not constitutionally subsist, that should be done by the judiciary to whom such tasks have traditionally been given in light of changing technological and marketplace conditions rather than by the Commission in its recommendations to Congress.

Copyright protection for programs would clearly be constitutional and invulnerable to attack directed at their utilitarian and apparent non-communicative nature. It is noteworthy that ever since the 1909 revision, such diverse works of authorship as telephone books, Leon v. Pacific Tel. & Tel. Co., 91 F.2d 484 (9th Cir. 1937); freight tables, Guthrie v. Curlett, 36 F.2d 694 (2d Cir. 1929); interest tables, Edwards & Deutch Lithographing Co. v. Boorman, 15 F.2d 35 (7th Cir. 1926); lists of motor vehicle registrants, New Jersey Motor List Co. v. Barton Business Serv., 57 F.2d 353 (D.N.J. 1931); and lists of otherwise meaningless five-letter code "words", Reiss v. National Quotation Bureau, 276 Fed. 717 (S.D.N.Y. 1921); whose value lies in utility rather than artistic merit, have all been found copyrightable. The intellectual effort required for the creation of a computer program is really not different from the efforts which created the above-described works which have been held to be copyrightable.

that sets forth a set of instructions permitting the process to occur. As such it is copyrightable. The Subcommittee, therefore, believes that Congress was correct in treating them as "works of authorship" in a legislative report[4/] accompanying the new Copyright Act.[5/]

## II. Why Protection?

The cost of developing a complex computer program is far greater than the cost of duplicating it. Consequently, computer programs are likely to be disseminated only if:

1) The creator can recover all of his costs plus a fair profit on the first sale of the work, thus leaving him unconcerned about the later duplication of the work;

2) The creator can spread his costs over multiple copies of the work with some form of protection against unauthorized duplication of the work;

3) The creator's costs are borne by another, as, for example, when the government or a foundation offers prizes or awards; or

4) The creator is indifferent to his costs and donates the work to the public.

The consequences of the first possibility would be that the price of virtually any program would be astronomical, leading necessarily to a drastic reduction in the number of programs marketed. In this country, possibilities three and four occur but rarely outside of academic and government-sponsored

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4/ H.R. Rep. No. 1476, 94th Cong., 2d Sess. (1976).

5/ P. L. 94-553 (1976).

research. The Subcommittee is, therefore, satisfied that some form of protection is necessary to encourage the creation and broad distribution of computer programs in a competitive market.[6] These works are the product of great intellectual effort and their utility is unquestionable. They permit the rapid and accurate completion of tasks that otherwise would have to be performed manually. Copyright protection in this instance is clearly of great social benefit in that it prevents the unjustifiable utilization of another's creative efforts without the permission of the original creator.

## III. Why Copyright?

In examining numerous non-copyright and "hybrid" proposals for protection,[7] as well as in giving thought to other considerations, the Subcommittee concluded 1) that programs are not different from other works now subject to copyright and, therefore, do not require a separate form of protection; 2) that the use of any of the other mechanisms for securing rights in intellectual property impairs broad access to or use of information to a far greater extent than does copyright;[8] and 3) that many proposals for new forms of protection are in most respects indistinguishable from copyright.[9]

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6/ Indeed, several more or less mutually exclusive forms of protection are currently utilized. As discussed below, the Subcommittee believes that the public interest can best be served by clarifying the availability and scope of these forms, and, further, by providing for clear copyright protection. For a discussion of the economic impact of various forms of protection see Braunstein et al., Economics of Property Rights as Applied to Computer Software and Data Bases (1977) [NYU Report prepared under contract with CONTU].

7/ Such hybrid proposals generally combine elements of patent and copyright. See, e.g., the various proposals found in Kindermann, M., Special Protection Systems for Computer Programs, 7 I.I.C. Quarterly 301 (1976) and made to the World Intellectual Property Organization (WIPO) in Kolle, "Computer Software Protection -- Present Situation and Future Prospects," 13 Copyright (Mar. 1977) 72.

8/ For a comparison of the characteristics of the three major protective mechanisms see the table and the comments thereto, pp. 13-15.

9/ See Kolle, supra, note 7.

A reading of the Act of 1976 and consideration of its legislative history[10/] indicates that it was Congress' intent that computer programs be within its ambit. The Software Subcommittee does not, of course, base its conclusions solely upon Congressional intent. The Subcommittee does believe that copyright is appropriate for computer programs and that, because of a lack of precision in the new law, amendments, as indicated on pp. 16-23, are necessary to state clearly that it encompasses computer programs and to clarify the scope of copyright in such works.

From a policy standpoint, the worth of copyright protection is manifest. As one commentator observed at the time the Register of Copyrights first agreed to accept programs for copyright registration,[11/] the other forms of protection do little to encourage the dissemination of information.[12/] Any form of protection for computer programs other than copyright would restrict society's

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10/ See P.L. 94-553, §§101, 102, 301 and accompanying House and Senate Reports. The House report is particularly instructive. Concerning "literary works," in which copyright subsists, it states: "The term does not connote any criterion of literary merit or qualitative value...it includes...computer programs...." H.R. Rep. No. 1476, 94th Cong., 2d Sess. 54 (1976).

11/ From 1964 until January 1, 1978, the authority for seeking copyright in a program has been, and will continue to be, the Register's letter of May 19, 1964.

12/ "Without copyright protection, the developer of a computer program is confronted with a choice between carefully concealing the program or contributing it to the public by disclosure. Neither alternative permits a large scale distribution with the reasonable expectation of financial compensation. There is a possibility of protecting computer programs under the law of unfair competition. The most likely source of protection, however, the doctrine of trade secrets, would not seem capable of supporting a system of wide scale commercial distribution. An idea will not be protected as a trade secret if examination of the marketed manufactured item would completely disclose it to the observer. Moreover, the requirement of secrecy is both stringent and unclearly delineated, and the remedies available are limited." Note, Copyright Protection for Computer Programs, 64 Colum. L. Rev. 1274, 1298-1299 (1964).

access to information to a greater extent than does copyright because such other forms afford proprietors far greater monopoly power over their wares.

The most significant of these forms are (1) federal patent protection, (2) the various state laws of trade secrecy, and (3) the laws of unfair competition. The use of patents to protect software gives rise to at least three problems. In the first place, the availability of patent protection for programs is unclear.[13/] In the second place, even if available, only software meeting the rigid standards of novelty and nonobviousness required by Title 35 of the United States Code could be patented. In a "patent-only" world, therefore, most programs would be unprotected and those which were patented would receive protection -- extremely strong protection -- against use by others of the underlying concepts or principles of operation. The requirements for copyright protection are much less stringent, which means that all such works will be protected subject only to the requirement of originality. The strength of the protection will be substantially less than that afforded by a patent. And, in the third place, unlike copyright, patents can be used to protect "processes,"[14/] and

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13/ Recent decisions in the Court of Customs and Patent Appeals ordered the award of patents to software (or softwarelike creations) over the strenuous objection of two judges who held that Gottschalk v. Benson, 409 U.S. 63 (1972) and Dann v. Johnston, 425 U.S. 219 (1976), cases in which the Supreme Court found software to be ineligible for patent protection, precluded such protection. In re Chatfield, No. 76-551 and In re Noll, No. 74-541. The precedential value of these cases in the face of possible Supreme Court review seems questionable, at best. In any event, the Patent and Trademark Office announced on December 14, 1976, that it would rely on Benson rather than Noll or Chatfield "since further review or clarification [of them] may be forthcoming." 954 O.G. 550, 312 P.T.C.J. at A-12. The Solicitor General has asked the Supreme Court to review the decisions in Noll and Chatfield.

14/ Cf. Title 35 U.S.C. §101 and Benson, n. 13, supra, with P.L. 94-553, §102(b).

under the patent system the independent development of the same work is an infringement. The independent creation of a work identical to a pre-existing copyrighted work does not infringe the copyright in that prior work.

The most widely used form of protection currently employed is trade secrecy.[15/] Its deficiencies may be briefly listed:

1) Hostility to the free exchange of ideas -- A secret is just that--if maintained it may contribute to its owner's profit but not to the broad dissemination and interchange of information.

2) Inappropriateness with respect to general purpose programs having a potentially large market -- A trade secret by its very nature is something that its owner cannot distribute widely, since the distribution of each copy of the item in which a trade secret is asserted makes it increasingly likely that a breach in security and, therefore, loss of the secret will occur.

3) Ease of loss -- Trade secrecy protection generally becomes unenforceable through disclosure of the confidential process or formula to anyone outside the scope of the agreement between the entrepreneur and his customer(s). Whether such disclosure is intentional, inadvertent, or caused by the "disclosee" is of no moment as far as the loss of the secret is concerned. Not only can a trade secret be lost through laxity on the part of its owner but tenacity can yield the same result, as where the record of the trial renders the "secret" public, and thus unenforceable.

4) Expense -- Each transaction involving a "secret" program requires substantial expenditures to maintain its security, thereby adding considerably to the cost of the product.

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15/ For a general discussion of the use of trade secrecy in software protection, see Bender, Trade Secret Protection of Software, 38 Geo. Wash. L. Rev. 909 (1970) and 3 Computer L. Serv. §4-4, art. 2 (1975).

5) Non-uniformity -- Each state is free to develop or not to develop the doctrine as it sees fit. 16/ Moreover, as a judicially created concept there is frequently ambiguity as to its existence and scope.

Copyright, in contrast, serves well those interests that trade secrecy serves poorly. Its protection is provided by uniform federal laws; transaction costs associated with copyright are smaller than those associated with other forms of protection for intellectual property; under Chapter 4 of the new law copyright protection is difficult to lose; 17/ copyright is designed to promote the dissemination of information and is particularly well-suited to large scale distribution of intellectual property; and, unlike trade secret protection, it does not inhibit development of the art. 18/

The common law doctrine of unfair competition also may be used to protect software. It is based upon the principle that one may not appropriate a competitor's skill, expenditures and labor and prohibits false advertising or the "passing off" of another's work as one's own. Its utility is limited by one of the same shortcomings as trade secrecy -- lack of national uniformity -- and by the absence of one of copyright's strengths -- applicability to third-party users as well as to parties to an original transaction. A small body of federal law, developed around §43(a) of the Lanham Act, 19/

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16/ See Nycum, S.H. The Criminal Aspects of Computer Abuse: Applicability of the State Penal Laws to Computer Abuse (1976); the article contains a discussion of the development of trade secrecy protection in its civil and criminal forms.

17/ See generally P.L. 94-553, §§405 & 406.

18/ See pp. 20 & 21, infra, for a discussion of the extent to which the new Copyright Act may affect the vitality of trade secrecy protection for computer programs.

19/ 15 U.S.C. §1125(a).

has, to a certain extent, made unfair competition a federal doctrine as well.[20/] This provides rights supplementary to those found in copyright but because its scope is not as broad as copyright, it alone does not offer sufficient protection. For example, the unauthorized copying of a work for use, rather than resale, could be a copyright infringement without amounting to unfair competition.

The Subcommittee, of course, is aware of some testimony received by the Commission to the effect that copyright may be neither needed nor useful in protecting programs. Two general contentions were made: first, that the software industry is burgeoning in a market where the availability and efficacy of legal protection is unclear and, second, that, since infringements of programs are difficult to detect, enforcement of any law is rendered difficult.

As to the first contention, it is not true that the software explosion has occurred in the absence of copyright. Rather, it has occurred in a world in which an amorphous mix of trade secrecy, copyright, contractual and, perhaps, patent protection has been available and has been employed by various proprietors.

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20/ See Allison, J. R., "Private Cause of Action for Unfair Competition Under the Lanham Act", 14 Am.Bus.L.J. 1 (1976).

For example, although no cases dealing directly with copyright infringement in computer programs have been reported and, despite the fact that to date only some 1300 programs have been registered with the Copyright Office, a large number of general purpose programs available for sale or lease bear copyright notices.[21/] These notices have permitted copyright holders to achieve settlements with suspected infringers without the necessity of instituting suit.[22/] Thus, it seems that, in at least some cases affixation of a copyright notice, without more, creates a level of protection in the market. The real question is not whether the industry is burgeoning -- with or without copyright -- but whether a change in the status quo that would decrease reliance on trade secrecy and other means of legal protection that restrict access to these works is desirable, particularly in view of trends in the industry toward the marketing of software products totally independently from the machines themselves.

In short, as stated above, the Subcommittee believes that the Commission's recommendations should be that the law specifically provide for the protection of programs and that it do so in a manner designed to avoid the rapid obsolescence which befell the 1909 Copyright Act. If those recommendations lead to reduced reliance on trade secrecy protection, they will undoubtedly have the beneficial effect of causing the products of the industry to become more widely available at a lower unit price.

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21/ Including, for example, all of the program products from IBM and the Digital Equipment Corporation.

22/ Testimony of Daniel McCracken at the November, 1976 meeting and telephone conversation with Elmer Galbi, Esq. of IBM.

With respect to the second contention -- the asserted difficulty concerning enforcement -- the possibility that violations of law may go undetected cannot militate against the law's existence; it merely suggests that more efficient means of enforcement need to be sought.

The following table shows, at a glance, some of the considerations weighed by the Subcommittee in making its determination. We have included comments to those items which are starred (*). In the Subcommittee's view, the answers to such economic questions as the effect of protection on the market and the opportunity it creates for an uncompetitive rate of return tend to show that, of the various potential modes of protection, copyright has the smallest negative impact. The reports from the contractors retained by the Commission to assess the economic impact of the several modes of protection should shed more light on this important topic.[23/]

Characteristics of Protective Mechanisms

| | Copyright | Patent | Trade Secrecy |
|---|---|---|---|
| **General Considerations** | | | |
| 1. National Uniformity | yes | yes | no |
| 2. Protection Effective Upon | creation of work | successful prosecution of application | entrance into contractual relationship |
| 3. Cost of Obtaining Protection | nil | moderate | moderate |
| 4. Term of Protection | life plus 50 years or 75 years | 17 years | possibility of both perpetual protection and termination at any time |
| * 5. Cost of Maintaining Protection | nil | nil | significant |

23/ The NYU Report, supra, note 6, received May 5, 1977, suggests that copyright is superior to trade secrecy with respect to increased information in the marketplace, the development of multi-purpose software, the reduction of duplication of efforts and diversification of available products.

| General Considerations (cont'd) | Copyright | Patent | Trade Secrecy |
|---|---|---|---|
| * 6. Cost of Enforcing Rights Against Violators | moderate | moderate | higher |
| 7. Availability of (a) Statutory Damages (b) Attorney's Fees from Infringers | a. yes<br>b. yes | a. no<br>b. yes | a. no<br>b. no |
| 8. Protection Lost by | gross neglect | unsuccessful litigation | disclosure |
| **Software Considerations, Including Effects of Subcommittee Proposals** | | | |
| 9. Consistency with other copyright areas | yes | no | no |
| * 10. Availability of protective mechanism for some programs | yes | unclear | yes |
| * 11. Universal Availability of protective mechanism for all programs | yes | no | no |
| 12. "Process" protectable | no | yes | yes |
| 13. Suited to Mass Distribution | yes | yes | no |

COMMENTS WITH RESPECT TO STARRED ITEMS IN THE TABLE

Item No.

5. Once copyright or patent is secured, it costs little or nothing to keep it in force; on the other hand, expensive security measures must be taken to avoid losing a trade secret. The cost of this security is, of course, passed on to the user.

6. Copyright and patent infringers in some instances can be persuaded to comply without the institution of a lawsuit. If litigation is necessary, it may be expensive, but in copyright and patent cases attorney's fees may be awarded to successful plaintiffs. At trial the proprietor bears the burden of proving that the trade secret is valid; in patent cases there is a presumption of validity and in copyright actions a registration

certificate is prima facie evidence of the copyright's validity. The proof of the validity of a trade secret may be expensive and difficult, as it almost necessarily involves the retention of expert witnesses. Although such witnesses may be needed in copyright and patent suits in those cases there will have been at least some compliance with federal law regarding public notice of claimed rights before the lawsuit is initiated. A suit to enforce a trade secret, even though successful, may destroy the secret if it is offered into evidence and becomes part of the public record of the trial.

10. As of the present, doubt exists whether programs are proper subjects for patent protection. (See p. 8, supra).

11. Even if programs are patentable, only those which are truly novel and nonobvious will be protected. Trade secrecy is, of course, unavailable when the contents of a program have been disclosed.

## IV. How Copyright?

The object of any amendments to the copyright law should be to clarify the rights of the holder of copyright in a computer program and of its users. The need for such clarification is created by the way in which programs are used. In the absence of §117 [24/] the loading or inputting of a program into a computer would constitute the preparation of a copy. Section 106(1) of the law provides that copying is the exclusive right of the copyright owner. Thus, any use of programs by strangers would constitute infringements unless language of the type proposed below is adopted to replace the current §117.

The current copyright practice would be but slightly affected if the Subcommittee's recommendations were adopted. Indeed, it is believed that the suggested changes will lead not only to satisfactory protection against the misappropriation of software but also to increased consumer and competitor knowledge concerning the nature of the goods in the market.

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24/ The Subcommittee anticipates that any Congressional action with respect to any computer-related Commission recommendations will include the deletion of the "interim" or "moratorium" provisions of §117.

1. Proposed New Definition:

The Subcommittee believes that it would be appropriate to include among the definitions in §101 the definition of a computer program. We suggest the following language:

> "A 'computer program' is a fixation of a series of statements or instructions to be used in conjunction with a computer in order to bring about a certain result."

A statutory definition is needed if, as proposed, a new section pertaining to computer programs is to be included in the Copyright Act. There are three reasons why this definition is useful. First, since it lacks data processing jargon and phrases concerning the way in which programs are used, it is not tied to current technology. The Subcommittee believes that changes in the way computers work should not change the extent to which copyright subsists in programs. The definitions of "literary works" and "copies" now found in §101 preclude the necessity of describing in the definition the forms or media in which programs may be fixed. And, third, no attempt need be made in the definition to address explicitly the program/algorithm version of the idea/expression distinction. This distinction, which has caused great uncertainty in the world of copyright, is not, of course, unimportant. However no further statutory elucidation is required because the new law already deals with it adequately.

§102(b) now provides that:

> "In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated or embodied in such work."

That portion of the House report which deals with that provision contains the following passage:

> "Some concern has been expressed lest copyright in computer programs should extend protection to the methodology or processes adopted by the programmer, rather, than merely to the 'writings' expressing his ideas. Section 102(b) is intended among other things, to make clear that the expression adopted by the programmer is the copyrightable element in a computer program, and that the actual processes or methods embodied in the program are not within the scope of the copyright law." 25/

Also important is the House's statement of the content of the term "literary works" to which copyright protection extends:

> "It also includes . . . computer programs to the extent that they incorporate authorship in the programmer's expression of original ideas, as distinguished from the ideas themselves." [Emphasis supplied]. 26/

These principles have been employed by courts in disposing of copyright cases involving the idea/expression issue. 27/ In each instance, where the question arose, the court made clear that copyright protection cannot subsist in works capable of being expressed in only a particular and limited manner on the grounds that free access to the expression is necessary in order to utilize and convey the unprotectable idea. Any work designed to control the operation of a computer that can be expressed only in a particular and limited manner is no more subject to exclusivity under the aegis

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25/ H.R. Rep. No. 1476, 94th Cong., 2nd Sess. 57 (1976).

26/ H.R. Rep. No. 1476, 94th Cong., 2nd Sess. 54 (1976).

27/ See Baker v. Selden, 101 U.S. 99 (1879); Morrissey v. Procter & Gamble Co., 379 F.2d 675 (1st Cir. 1967); Crume v. Pacific Mutual Life Ins. Co., 140 F.2d 182 (7th Cir. 1944).

Proposed

of copyright than is a method of accounting,[28] a set of Social Security Account Number Sweepstakes Rules[29] or the plans for a company's reorganization.[30]

It should be emphasized that the protection which would be afforded programs by copyright would not serve to block the use of a program's underlying concepts by others since copyright never protects ideas, but only the expression thereof. When specific computer instructions, even though previously copyrighted, are the only and essential means of accomplishing a given task, their later use by another will not amount to an infringement. In discussing an insurance company's use of a lawyer's copyrighted forms, a federal court of appeals stated in Continental Casualty Co. v. Beardsley:[31]

> "the use of specific language...may be so essential to accomplish a desired result and so integrated with the use of a...conception that the proper standard of infringement is one which will protect as far as possible the copyrighted language and yet allow the free use of the thought beneath the language. The evidence here shows that [the company] insofar as it has used the language of [the lawyer's] forms has done so only incidental to its use of the underlying idea.... In so doing it has not infringed." [Empahsis added].

In the opinion of the Subcommittee, the above underscored language in Beardsley indicates that copyright protection for programs would indeed be "thin," because in the programming field the use of specific language -- instructions -- may, in some instances, be so basic, essential and integrated with the underlying idea that use of the same language would not constitute infringement.

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28/ Baker v. Selden, 101 U.S. 99 (1879).

29/ Morrissey v. Procter & Gamble Co., 379 F.2d 675 (1st Cir. 1967).

30/ Crume v. Pacific Mutual Life Ins. Co., 140 F.2d 182 (7th Cir. 1944).

31/ 253 F.2d 702 (2nd Cir. 1958). See, also, Harcourt, Brace & World, Inc. v. Graphic Controls Corp., 329 F.Supp. 517 (S.D.N.Y. 1971).

2. Proposed New §117 (to replace §117 as enacted):

"§117: Limitations on Exclusive Rights: Computer Programs

Notwithstanding the provisions of §106, it is not an infringement for the rightful possessor of a copy of a computer program to make or authorize the making of another copy of that computer program provided:

(1) that such new copy is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner, or

(2) that such new copy is for archival purposes only and that all archival copies are destroyed in the event that continued possession of the computer program should cease to be rightful.

Any copies prepared in accordance with the provisions of this section may be leased, sold, or otherwise transferred by the person making such copies only as part of the lease, sale, or other transfer of all rights in the program."

The proposed §117(1) is designed to make it clear that the "inputting" of a program by a rightful possessor is not an infringement.[32/] Section 117(2) is designed to permit a user to prepare a copy for storage as insurance against loss in the event of destruction of the copy rightfully acquired. This section is worded in a manner similar to several already existing limitation sections.[33/] Provisos (1) and (2) serve to make it clear that blanket permission to copy is not granted to an intended user and that any copying by a wrongful possessor is a violation of §106(1). Wrongful possession would

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32/ The Whitford Report, note 2, supra, reflects a similar result. Its fifth recommendation — declaring unauthorized use an infringement — is redundant if the loading of a program into a computer is the preparation of a copy. If, as seems clear, U.S. copyright law provides in effect that loading is copying, then, no separate "use" prohibition is necessary. Many interested parties have suggested that the law should provide the owner of copyright in a computer program with a right similar to the right of public performance found in §106(4) of the new law. Because all use of a program requires the preparation of a copy, the Subcommittee is of the belief that no "use" right, beyond that in the proposed §117, be recommended. Simply put, by regulating the copying of a program, its use is also regulated.

33/ Cf. §§107-109.

include but not be limited to,

(a) possession of a "pirate" copy,
(b) possession of a stolen but "non-pirate" copy,
(c) retention of any copy after the expiration of a period of rightful possession, or
(d) retention of any copy after transferring all rights in a program to another.

Copying by a rightful possessor outside the scope of the provisos would also be barred. Thus, in the absence of explicit authorization from the copyright owner, the preparation by the user of multiple copies, whether for internal distribution or transmission to others would be an infringement.

It should be noted that the conversion of a program from one computer "language," such as COBOL, to another, such as FORTRAN, would amount to the preparation of a derivative work and would remain the exclusive right of the copyright owner.

Owners of copyrights in programs of which copies are sold could in no way restrain the further alienation of such copies, but their vendees could not make and vend or retain additional copies without infringing the copyright. The utilization of a pirate copy would involve two infringements -- first, the preparation of the pirate copy and second, its use in which another copy would necessarily be prepared.

3. Preemption.

Section 301 is designed to make it clear that trade secret protection is preempted to the extent that such protection is not "different in kind from copyright infringement."[34/] Thus trade secrecy protection could not be asserted where its purpose was to prevent the copying of a work. After January 1, 1978, copyright will subsist in all programs from the time of their first fixation in tangible media of expression. The proprietor will be required to seek compensation for misuse of the program through an action against the infringer for statutory damages or actual damages

34/ H.R. Rep. No. 1476, 94th Cong., 2nd Sess. 132 (1976).

and profits, remedies to which he, as all other copyright owners, would be entitled. Simply put, the proprietor who seeks revenues from users of his copyrighted work -- be it a book, photograph or computer program -- ought not to be entitled to allege that his work, although available to users, is somehow "secret," in the same way that a carefully guarded formulation for a soft drink syrup may be.

Any resultant reduction in the use of trade secrecy should have at least two salutary effects. It should reduce the number of occasions when a programmer has to repeat the prior effort of another because that prior effort is kept secret. It should, according to the NYU study,[35/] reduce the social waste inherent under trade secrecy which results when new programs are made unnecessarily complex so that their essence is difficult for even skilled readers to discern. None of this, however, should be taken as suggesting that no program may ever be protected as a trade secret. Nothing in this proposal compels a programmer to publish his work. Nor would the programmer be prevented from entering into contracts designed to restrict disclosure of the program. However, as seems self evident, trade secrecy could not be relied upon if a program were widely marketed or otherwise broadly distributed.

4. Term of Protection.

Because all other works of authorship receive the period of protection provided by §302 of the 1976 Act, and because the scope of protection afforded programs by copyright may be relatively "thin,"[36/] there seems to be no persuasive reason to add further complexity to the law by altering the

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35/ Supra, note 6.

36/ Supra, pp. 16-18.

uniform term of protection for these works. Although most programs may have shorter useful lives than the full term provided by the statute,[37] this also is true of other works, such as directories, which receive full-term protection. With regard to all types of works, it is the exceptional one that has a useful life of several decades, but it is exactly those works that the lengthy periods of protection in §302 were enacted to protect. It should also be noted that no one is harmed when short-lived works remain protected beyond their brief periods of utility. For example, a telephone directory published in 1978 will remain under copyright through 2053 with no apparent adverse effects upon society.

5. Suggestions Concerning Regulations.

The Subcommittee recommends that notice, deposit and registration regulations be promulgated by the Register of Copyrights. However, certain general comments seem in order.

Copyright notice in the form prescribed in §401(b) should be required on all formats in which a program is marketed.[38] On programs capable of being read by the unaided eye such notice should appear prior to the list of instructions that comprise the program. Those programs which can be read only with the aid of a machine or device should contain notice in the medium of fixation such that the contents of the program cannot be listed without reproducing the notice in the position just described. Further, containers in which copies of such "machine-readable" programs are sold, leased or transported should bear plain

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37/ In addition, the Commission received testimony that operating system software and programs, such as DIALOG, used in conjunction with data bases, often have useful lives in excess of ten years.

38/ Such notice must consist of the word "Copyright," the abbreviation "Copr." or the symbol © together with the year of first publication and the name of the copyright owner.

notice as should such devices as 1) reels upon which magnetic tape is wound or 2) semiconductor chips in which programs are stored.

With respect to deposit and registration requirements, the Subcommittee believes that regulations should promote public access to computer programs while being fluid enough to accommodate future changes in software technology. Several options appear available. A system of "temporary" deposit, similar to the practice followed with respect to motion pictures, might be appropriate. In the alternative, permanent deposit of complete copies of original versions of programs could be required, with descriptions rather than complete copies of amended versions being filed thereafter. In any event, such requirements can best be established by the Copyright Office.

## V. Postscript

A previous version of this report was discussed at the Commission meetings in February and April, 1977. On those occasions there were expressions of reservations about the Subcommittee's recommendations. This draft of the report includes changes that respond to comments and criticism made at those meetings. In addition, it is anticipated that dissenting views will accompany this report when it is publicly circulated for comment.

Substantive issues discussed were:

1. Whether, as a policy matter, software should be protected.

2. Whether the intent underlying the copyright clause of the Constitution encompasses software.

3. Whether the inclusion of software in the scope of copyright depreciates the nation's cultural heritage.

4. Whether new technologies, deserving of protection, should be protected by a new law other than copyright.

Concern was expressed with respect to the Software Subcommittee's report regarding:

a) Why witnesses from the computer industry but not representatives of authors and the public interest have been heard.

b) Whether the Subcommittee had considered public policy issues in making its determinations.

c) How the Subcommittee reacted to a division among software witnesses that appeared to be eleven for copyright protection and sixteen for other forms of protection.

The current version of this report is responsive to several of these items. The rationale for protection in whatever form is outlined in Part I, entitled "Why Protection?" and in the NYU report. The constitutional question is discussed in note 3. The policy issues which are the foundation upon which the Subcommittee based its report are discussed in varying detail at pages 5, 7-10, and 13-15. A new form of protection is not recommended because programs are instructions fixed in a tangible medium of expression and, by that token, presently copyrightable and because Congress is likely to prove unreceptive to proposals to protect each new form of expression with a separate special statute. In a recent study for the World Intellectual Property Organization (WIPO) the author, who generally proposes that a new form of protection be created, notes that

> "in a number of countries it would already be possible to give such protection [to programs] on the basis of current legislation on copyright...and consequently special legislation would not be necessary. In various countries, including the United States...there would seem to be no particular desire to set up special provisions to protect software." 39/ (Emphasis added).

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39/ Kolle, Computer Software Protection--Present Situation and Future Prospects, Copyright, March, 1977, 72.

Turning to the asserted division of the software witnesses, it should be noted that it was not precisely 11 for copyright and 16 for something else. In 1976, the Commission received oral and written testimony from 20 witnesses representing 18 organizations. Their views may be interpreted as follows: 11 favored copyright, 3 patent, 3 trade secrecy, 8 had no preference and 2 perceived no need for protection. Since several persons supported copyright and one or more other forms of protection, the same person may be counted in the final tabulation as having "cast" his "votes" both "for" and "against" copyright. Finally, of course, the Subcommittee has based its recommendations not upon a headcount but upon a consideration of all the factors that bear on the issues at hand. It believes that the needs of all parties and the public may best be served by amending the Copyright Act as it suggests.

With respect to the nature of the witnesses, it should be pointed out that notice of all Commission meetings, as well as invitations to interested parties, have been published in the Federal Register and in more than a dozen press releases which were sent to the addressees on a mailing list currently containing more than 400 names. The Author's League was specifically asked to encourage individual authors to contribute to the proceedings of the Commission. Although some public interest organizations apparently screen the Federal Register for items of interest, the Commission's work has apparently not aroused interest within such public interest and consumer groups. To ensure that all viewpoints are made known, the Commission has entered into two contracts with

public interest organizations to provide additional input of the type not yet received. The results of those studies should be available by July, 1977.

The Subcommittee believes that affording copyright to software could not constitute a threat to cultural values. That public perceptions, beliefs and actions might vary depending upon whether computer programs are in or out of copyright seems rather unlikely. Works of both great and small aesthetic value should be similarly protected lest the government acquire the power to assess the merits of a work and choose only those works which in its view are "good enough" for copyright. The copyright law, applying as it does to all forms of expression, should be broad enough to shelter the works of Nobel laureates and computer programmers without causing any confusion about which is which.

NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS
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# ADDITIONAL VIEWS ON COMPUTER SOFTWARE

John Hersey

This "additional view" will argue that computer programs should not be secured by copyright. It will center its argument on the question whether computer programs qualify, under the Constitutional meaning, as "works of authorship" which may be protected by copyright.

It will suggest some ways in which the protection of computer programs by copyright might have an undesirable impact on the national culture.

It will urge the Commission to consider whether any additional protection for programs is in fact needed; and if it decides that it is, to consider the option of a new form of protection, outside copyright. A draft of a model statute, expressing that option, is attached.

The length of this paper is regrettable, but since it is the only CONTU response that opposes the Software Subcommittee Report as a whole, detailed discussion is, alas, obligatory.

## ARE PROGRAMS WRITINGS?

The premise of the Software Subcommittee Report (p. 6), upon which all of its conclusions stand or fall -- "that programs are not different from other works now subject to copyright, and, therefore, do not require a separate form of protection" — is, in this view, false. Programs are profoundly different from the various forms of "works of authorship" secured under the Constitution by copyright.

All computer programs go through various stages of development. Each program may indeed be considered a writing of an author -- up to a certain point in that development; beyond this point, however, the same

program is embodied in material form and becomes a mechanical device, which is engaged in the computer to become an essential part of a mechanical process.

Thus the computer program is something strikingly new in our culture: something which is, at different times, both a writing and a mechanical device.

The stages of development of a program are: a definition, in eye-legible form, of the program's task or function; a description; a listing of the program's steps and/or their expression in flow charts; the translations of these steps into a "source code," often written in a high-level programming language such as FORTRAN or COBOL; the transformation of this source code within the computer, through intervention of a so-called compiler or assembler program (which has itself previously gone through all these stages), into an "object code." This last is most often physically embodied, in the present state of technology, in punched cards, magnetic discs, magnetic tape, or silicon chips.

Every program comes to fruition in this object stage. Every program has but one purpose and use — one object: to control the electrical impulses of a computer in such a particular way as to carry out a prescribed task or operation. In its object form it does not describe or give directions for mechanical work. It does the work.

An argument commonly made in support of the copyrightability of computer programs is that they are just like ordinary printed (and obviously copyrightable) lists of instructions for mechanical work. The Software Subcommittee calls a program (p. 3) "a writing which sets forth instructions or sets of instructions." But this analogy, or metaphor, does not hold up. Descriptions and printed instructions tell human beings how to use materials or machinery to produce desired results. In the case of computer programs, the instructions themselves become an essential part of the machinery that produces the results.

They may become (in chip or hardwire form) a permanent part of the actual machinery; or they may become interchangeable parts, or tools, insertable and removable from the machine. In whatever material form, the object phase of the program enters into the mechanical process. The former language of the instructions is converted into a device commanding a series of electrical impulses which -- to use a slightly inexact layman's image — set and operate the switches of the computer in such order as to produce the desired result.

At different times, then, a given program is both "source" and "object," both a writing and a mechanical tool or machine part. Printed instructions tell how to do; programs both tell how and do. The language used to describe and discuss computer programs commonly express this latter, active, functional phase, not the "writing" phase. For example, an earlier draft of CONTU's Data Base Subcommittee, discussing automated data bases, spoke of a "program which does the searching and retrieving" -- note the operative verb, "does." It was not said that the program "describes" or "gives instructions" for functions of search and retrieval. It "does" them. This is the mechanical fact. A true writing has never before done work in this way -- no matter how fervently many an author may have wished his words could "do" something.

Copyrightability of Parts but Not of the Whole; Inseparability of the Parts.

The Software Subcommittee Report (p. 4) posits that with computer programs there are "three different phenomena." (How these phenomena obtain, as the Report says they do, with "all forms of creative endeavor" is a mystery.)

These are said to be:

d) A description of the activity (process);

2) The activity (process) itself;

3) The results of the activity (process).

The report suggests that anything that is a description is entitled to copyright. But what the Report fails to make clear is that with a computer program, item (1) becomes an essential part of item (2). The "activity (process)" cannot take place without the actual mechanical intervention of the objectified "description." The two are not, in real life, separable.

The first stages of a computer program -- definition, description, flow charts, listing of steps, all in human-readable form — might be considered copyrightable without any change in the present law, providing the program developer chose to publish them, to affix notice, and to deposit copies with the Library of Congress; though it is fairly clear, from testimony we have heard, that program developers would like not to have to do this, for fear of revealing their underlying ideas.

But when it comes to the object, or operative, stage of the program, when it becomes indistinguishable from a machine part and does work — all resemblance to a "writing" or "description" has been lost. It is a machine tool. In use it has become part of a mechanical process. It is not copyrightable.

If we take the program as a whole, we see that it has both copyrightable and uncopyrightable parts or stages. The latter would preclude the possibility of copyrighting the whole. "In no case," Section 102(b) of the 1976 Act says, "does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of

operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such a work."

The essential fact here (one which needs heavy emphasis) is that computer programs have to be treated as a whole. For purposes of protection, the stages cannot conveniently be separated. Computer developers offer on the market a program package which, besides explanatory materials, contains the program itself, either in the form of printed listings (usually the source program, which in printed form might be copyrightable) or, more often, in the form of punched cards, magnetic tape, discs, chips, or hardware (object program, uncopyrightable), or both at once. In commerce any given program is inextricably both a writing and a mechanical device. Indeed, the only really valuable stage, for use or lease, is the part that is a tool or machine part, the object program, but in order to protect the intellectual effort and inventiveness that went into this property, both stages would need to be protected at once.

The Software Subcommittee (p. 4, fn. 3) recommends leaving to the courts the task of drawing lines between the copyrightable and uncopyrightable forms of a program. For the proprietor, this is a most hazardous suggestion. If the courts decided that copyright could constitutionally subsist in the human-readable stages of a program, but not in the object, or mechanical, phase, then copyright protection for programs as a whole would become largely meaningless, and of no practical use to the industry, since it is the object phase of a program that has commercial value.

## A Different Order of Work

The fact that a program is designed to do labor, and does it, makes it a different order of work from all forms of "writing" in which copyright has previously subsisted. There could be no more dramatic way of demonstrating

this than to do what the representatives of the Computer and Business Equipment Manufacturers Association (CBEMA) have urged CONTU, in their testimony, to recommend -- namely, that Section 102 of the Act be amended to add computer programs (and data bases) to the list of "original works of authorship" entitled to copyright:

1) literary works;
2) musical works, including any accompanying words;
3) dramatic works, including any accompanying music;
4) pantomimes and choreographic works;
5) pictorial, graphic, and sculptural works;
6) motion pictures and other audiovisual works;
7) sound recordings;
8) computer programs;
9) data bases.

The startling gap between items (7) and (8) in this list is not simply a cultural matter -- which indeed it most hair-raisingly is. It is also a matter of orders of animals.

The Software Subcommittee Report does not urge adding these categories. It contemplates (p. 16) defining computer programs as "literary works" -9 and this (considering the program's object, or mechanical phase) is, in this view, even more hair-raising. More on this below.

It may be argued that the punched cards, discs, tapes, or chips of computer programs are "like" sound recordings, which <u>are</u> secured by copyright. But this analogy is also false. A closer analogy, in functional terms, would be between the embodiments of a computer program (magnetized discs, tapes, chips) and such mechanical devices as the magnetized cards which operate locks or give access to automated bank tellers.

The functions of computer programs are fundamentally and absolutely different in nature from those of sound recordings. The recording produces for the human ear the sounds that were fed into it and so is simply a medium

of transmission of the means of expression of the writing of the author. The program, on the other hand, manipulates the processes of the computer, doing electrical work which has only a functional, mechanical relationship to the writing of the program's author.

And the nature of the machine that plays the sound recording is fundamentally and absolutely different from that of the machine that uses software. The record player has as its sole purpose the performance of the writing of the author in its audible form. The computer may in rare instances serve as a storage and transmission medium for writings (but different writings from those of the computer programmer -- i.e., data bases) in their original and entire text -- in which cases these writings can be adequately secured at both ends of the transaction by the present copyright law; but in the overwhelming majority of cases its purposes are precisely to use programs to transform, to manipulate, to select, to edit, to search and find, to compile, to control and operate computers and a vast array of other machines and systems — with a result that the original writing of the computer programmer is nowhere to be found in recognizable form, because it has been converted into a mechanical device that does these sorts of work. It is obvious that the means of expression of the original work -- that which copyright is supposed to protect -- is totally lost in the final stage of the computer program.

The above discussion of sound recordings and playing machines could be equally applied to motion picture film in relation to the projector, or to any other original work of authorship, presently copyrightable, which can be "perceived, reproduced, or otherwise communicated . . . with the aid of a machine or device."

## The Issue of Communication

The above distinction needs to be examined with great care, because the discs, tapes, and chips of computer programs superficially seem very much like the discs and tapes of sound recordings, motion picture film, or video tape.

We take it as a basic principle that copyright should subsist in any original work of authorship that is fixed in any way (including piano rolls, records, video tapes, etc.) which communicates its means of expression.

But a program, once it enters a computer in its object phase, does not communicate information of its own, intelligible to a human being. It utters work. In its object phase its direct product is not communication but electrical work. It is purely and simply a mechanical substitute for human labor.

In cases where computer programs manipulate data bases, as for instance to select or edit material for a user, the resulting output may give the impression that programs do at least sometimes communicate with human beings. But it must be carefully borne in mind that the output of such processes is not communication of the means of expression of computer programs, but is a product derived from the data base by the electrical work of the program. It is, in other words, merely a result of the program's "activity (process)" -- the third phenomenon of the Subcommittee Report, cited on p. 3 above -- and has no bearing on the copyrightability or non-copyrightability of computer programs in their object phase.

The direct product of a sound recording, when it is put in a record player, is the sound of music — the writing of the author in its audible form. Of film, it is a combination of picture and sound -- the writing of the author in its visible and audible forms. Of video tape, the same. But the direct product of a computer program is a series of electrical impulses which operate a machine, a computer. The first three communicate with human beings. The computer program in its object phase does not.

The Software Subcommittee Report (p. 4, fn. 3) says, "To the untrained reader the object code does seem to lack communicative potential. That could also be said, however, of such clearly copyrightable works as a book in Sanskrit or a mathematical table of numbers."

The specious implication of these words is that trained readers do read object codes; in general practice they do notW If they did so, it would only be in the sense that a skilled electronic technician might be able to "read" a television circuit. Sanskrit is the classical language of India, meant to be read by literate human beings; mathematical tables may communicate vividly to statisticians, engineers, and others. It is clear that a computer program is not designed to be read by anyone; it is designed to do electronic work that substitutes for the very much greater human labor that would be required to get the desired mechanical result.

The Software Subcommittee Report recommends affording copyright protection to something that starts as a writing but ends as a labor-saving mechanical device.

A Spade by Any Other Name

In the act of wedging the purely mechanical object phase of computer programs into copyright, the Software Subcommittee has been obliged at various stages to resort to certain extraordinary euphemisms. One of them is, in this view, particularly shocking.

We have already touched on it -- the defining of computer programs as "literary works" (p. 16).

The early phases of programs, intelligible to human eyes, must be admitted to this category, which has, over the years, been stretched to include lists, code words, and so on. But it boggles the mind to think of the magnetized discs and tapes, the punched cards, and the silicon chips of programs in their object phase as "literary works."

A silicon chip is a remarkable little package, a half inch or less square, which consists of a number of laminated layers of printed electrical circuits, miniaturized versions of such printed circuits as are to be found in television sets, radios, and many other solid-state electronic machines. This mechanical device is here blithely defined as a "literary work."

Bearing in mind the categorical differences, elucidated above, between the tapes, discs, chips, and hardwire forms of computer programs, on the one hand, and the discs and tapes of sound recordings, motion picture film, and video tape, on the other, it is nevertheless necessary in this context, in order to stress the absurdity of this misnomer, to point out that neither the 1909 nor the 1976 copyright law called sound recordings "musical works" or motion picture or television film "dramatic works." (See section 102). Yet these chips, discs, and tapes are "literary works."

This straining of language, and other instances of it, simply point up the difficulty--the polluting and dehumanizing effects--of forcing into copyright something which is, at different times, a writing and a mechanical device.

## CULTURAL ISSUES

CONTU has a duty to consider the impact of its recommendations, not only on proprietors and users of information systems, but also on the public. Specifically, considering the long history of copyright's bond to the written word (in both works of literature and practical works), and its bond to musical composition, to painting and sculpture, to the theater, to dance, to film, we must weigh the impact of what we recommend upon the national culture. For copyright has always been a mainstay and guarantee of the creative wellsprings of the culture.

We have often said in Commission discussion that the dual purposes of copyright are the encouragement of creative work and the wide scattering of its fruits. The sanctioning of copyright protection for this new thing, which is both a writing and a mechanical device, would, in this view, tend to dampen the first purpose. Its impact on the creative community would be bound to be discouraging. Furthermore, its indirect impact on consumers of all forms of creative work would, in this view, be unfortunate.

### Communication--Human and Mechanical

The aim of all "writing," be it for art or for use, is communication. Up to this time, copyright has always protected the means of expression of various forms of "writing" which were perceived, in every case, by the human sense for which they were intended: written words by the human eye,

music by the ear, paintings by the eye, and so on. Here, for the first time, the protection of copyright would be offered to a "communication" with a machine.

This pollution of copyrighted "writings" with units of mechanical work would affect not only the creators but also the consumers of the culture. Placed beside such traditional end products as books, plays, dance, film, and music, under the aegis of copyright, what end products of computer programs would we find?

The overwhelming majority of program applications are mechanical and commercial: the monitoring of an assembly line in a factory; three parts in every automobile; a micro-computer soon, we are told, in every telephone head-set; the controls of a microwave oven; the aiming devices of a weapons system; the coordination of approach patterns at an airport. An entire branch of the program industry is devoted to systems software--new techniques for more efficient use of machines, for more efficient industrial processing.

Progress is progress, and we can guess that we must have all these products of human ingenuity in order to keep one jump ahead of entropy. But a definite danger to the quality of life comes with a blurring and merging of human and mechanical communication.

This danger is not simply to high culture; quite the contrary. This is not an aesthetic issue; this is not a matter of distinctions between Nobel laureates and computer programmers (Report, p. 26). It is much more basic. It goes to the distinction between human beings and machines.

Various forces--among them, forces arising from new technologies of communication--have for some time been at work in industrialized societies to

blur the primary medium of human communication, the language people use in everyday speech. George Orwell, in his essay "Politics and the English Language,"[1/] showed how far the confusion of meaning of many common words has recently gone, and how dangerous these confusions are. The nation has only just begun to recover from a scarring episode of history, of which it may well be said that the characteristic evil was the misleading use of language in high places. Before he died, the poet W. H. Auden was asked by a reporter for The New York Times what the political duty of a poet is, and his answer expressed with great economy the dangers inherent in such blurrings: "As a poet . . . there is only one political duty, and that is to defend the language from corruption. And that is particularly serious now. It's being so quickly corrupted. When it's corrupted, people lose faith in what they hear, and this leads to violence."

All this is not to suggest that the act of calling a mechanical device a "literary work" (even though this is obviously a corruption of language) contains, in itself, any such grave political or societal dangers. What is intended here is to suggest that official sanction of a correspondence, under law, between communication with human beings and "communication" with machines would tend to reinforce, to some extent, two cultural phenomena that are potentially dangerous--namely, the progressive dehumanization and commercialization of the culture, taken in its broadest and most widely disseminated sense; and a progressive blurring of language that seems to be a concomitant of just such rationalizations as the one we are dealing with here.

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1/ From Shooting an Elephant and Other Essays, by George Orwell; New York, Harcourt Brace Jovanovich.

The Individual Creator and the Corporation

While it has always been the case that corporate entities could be copyright proprietors, the picture one gets, where rights in computer programs are concerned, is that the proprietor will almost invariably be corporate. If there is an individual "author," it will be an author for hire, whose creativity is in strict harness and whose property rights are nonexistent.

The sheer bigness of the corporate enterprise in computers is staggering. According to testimony by Peter McCloskey, President of CBEMA, the combined revenues of the 42 members of that association of manufacturers of computers and related business equipment rose last year to 32.7 billion dollars; as to software, we heard at one point an estimate of 17 billion dollars' worth of it in the next three years. The art is growing and changing with dazzling speed. In his testimony Ralph Gommery of IBM suggested, with perhaps a pinch of hyperbole, that if the automobile industry had progressed on the same curve as computers in the last 15 years, we would now have been able to buy for $20 a self-steering car that would attain speeds up to 500 m.p.h. and be able to drive the length of California on one gallon of gasoline. Peter Weiner of RAND gave us the vision of a "computer-based" society a quarter of a century hence, with terminals in every home for all sorts of mechanical and communications aids.

Loading all this expanding technology into the field of copyright would be bound to bring a progressive change in emphasis, and the great new dominant interests would all be corporate. The Constitutional aim of encouraging individual "authors" would have, relatively, less and less weight.

The massive impact of corporate interests on individual creators has already been felt in the book publishing industry. The extraordinary series of corporate acquisitions and mergers in recent years[3/] has been having some disturbing and some disastrous effects on individual authors. A few corporate conglomerates have granted their subsidiary publishing houses autonomy, but some have not. The pressure is on to publish "big" books, and one consequence seems that more books but fewer titles are sold each year. There is a danger that the control by large trade publishers of large paperback houses will place smaller independent trade publishers, and their authors, at a disadvantage in placing paperback rights, particularly those of modest monetary value. One dire example of conglomerate pressure: a publishing house with a large output of textbooks was recently bought by a conglomerate with such diverse interests as ships and frozen foods. Down from the conglomerate came a directive on publishing efficiency, one stricture of which was that no book was to be kept in print, or published even if contracted for, if it has not sold, or would

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3/ For instance:

RCA acquired Random House, which already owned Knopf, Pantheon, Ballantine books, and other firms.

CBS acquired Holt, Rinehart & Winston and W. B. Saunders; Popular Library (mass market paperbacks); Fawcett Publishing (mass market paperbacks, Crest, Gold Medal); and 30 magazines.

Gulf & Western (which had previously taken over Paramount Pictures) acquired Simon & Schuster and Pocket Books.

ITT acquired Howard W. Sams, which in turn owned The Bobbs-Merrill Company.

Doubleday, the largest U.S. trade publisher, acquired Dell, the second-largest mass-market paperback house; Dell also publishes several magazines and, through Delacorte and Dial, hard-cover books. Doubleday owns the Literary Guild and other book clubs and many other media enterprises.

Los Angeles Times acquired New American Library (paperbacks).

Penguin acquired Viking.

Time, Inc., acquired Little, Brown.

Scott Foresman, one of the largest educational houses, owns Morrow and Silver Burdett--the latter also publishes textbooks.

not promise to sell, X number of copies a year. Result: a line of 119 volumes in a paperback series by some of the nation's most distinguished historians, most of which had been having steady sales of two or three thousand copies a year, was cut off dead, with no considerations of the worth of the works beyond their sales figures.

This is bad trouble for our society, and the soul of the trouble is in the type of corporate motive (desirable from the stockholders' viewpoint) that is most aptly symbolized by computer programs that are designed to increase industrial and commercial efficiency. These can distinguish between good and bad sales figures but are never programmed, for practical purposes, to distinguish between a manuscript--or an artifact, or a product--that makes a contribution to the quality of our society and one that does not.

## WHAT FORM OF PROTECTION?

Computer programs, as we have seen, introduce an entirely new order of things. How should property rights in this new combination be protected? It is appropriate to secure the means of expression of a writing through copyright. It is appropriate to protect a mechanical device through patent. What is the appropriate way to secure something that is both a writing and a mechanical device?

## STATUS QUO?

There is no question that a reasonable degree of protection, to justify the expense and intellectual work of devising programs, is needed. The first issue that needs to be settled is whether any protection in addition to that now available under law is, or will be, needed.

The Commission has been given ample testimony to the ardent and understandable desire of the computer industry for every form of protection it can get. No matter that trade-secrecy laws and copyright are mutually exclusive in intent; a number of interested witnesses have said they want both. But the Commission has not been given any evidence whatsoever that various forms of existing law, other than copyright, have been inadequate to secure computer programs during a period of fantastic development and fierce competition.

The only testimony the Commission has had as to actual abuses and misappropriations of computer properties has come from the Stanford Research Institute. In 470 cases over a 10-year period reviewed by SRI, not one involved issues in the area of copyright. In all cases, there was an existing realm of law under which the crimes could be, and were, dealt with. The actual crimes were malicious mischief, arson, burglary, bombing, murder, breaking and entering, larceny, obtaining money under false pretenses, theft, forgery, embezzlement, violation of trade secrets, altering of records, invasion of privacy.

The arguments of the Subcommittee against further reliance on trade-secrecy laws are theoretical, and some of them are highly dubious. (E.g., transaction costs: It is extremely doubtful that if the industry were given copyright protection for programs, it would discontinue the "expensive security measures" designed to prevent all forms of abuse and misappropriation.) The Subcommittee's arguments are not supported by any evidence the Commission has been given. As we shall see below, it is clear that the industry wants this form of protection and will do everything it can to hold on to it. A CONTU

staff paper, "Reasons for Denying Copyright to Computer Programs," deals with this trade-secrecy issue, among others, at length.

## THE NEW-LAW OPTION

In support of its view that computer programs should be protected by copyright, the Software Subcommittee presents extended arguments against two alternative forms of protection, patent and trade-secrecy laws.

But these are not the only non-copyright alternatives. From the very first, in staff memoranda and Commission discussions, another option has been listed: new legislation, defining a new form of protection tailored to this new phenomenon which is both a writing and a mechanical device, with the aims of encouraging new developments in the field and of ensuring their optimum reach.

This section of this paper will attempt to respond to some arguments against even considering the new-legislation approach; will present some second thoughts on claims for copyright for programs, as opposed to new legislation; and will offer one tentative, but apparently viable, model for such legislation.

### 1. The New-Technology Argument

One argument against the new-law approach offered the Commission by the Software Subcommittee has been the assertion, during an oral exchange, that you cannot write a new law for every new technology that comes along.

The reason for urging a new form of protection, however, has nothing to do with the newness of the technology; it has, rather, to do with entirely new problems of substance, arising from the fundamental nature of certain products and processes of the technology. The reason for urging the new form is

that something altogether new in essence--something that is both a writing (usually suitable for copyright) and a mechanical device (usually suitable for patent)--has emerged. This point is developed further in the above-mentioned staff paper, "Reasons for Denying Copyright to Computer Programs."

2. Mandate Argument

Staff memos have consistently argued that anything but copyright would be outside the mandate of this Commission; the sequitur seems to have been that CONTU therefore cannot consider the new-law approach. But if the Commission should conclude, after study, that copyright is not the right form of protection for computer programs, it would surely have to outline what it thought to be the appropriate alternative. If this were to be new legislation, the Commission would have to set forth the underlying principles of such a law, in order to justify its conclusion.

3. The Register's Memo Argument

"From 1964 until January 1, 1978," the Software Subcommittee report says (p. 7, and fn. 11), "the authority for seeking copyright in a program has been, and will continue to be, the Register's letter of May 19, 1964." Three things about this authority need to be stressed, however.

One is that the Register's decision to accept computer programs as "books" was made despite expressed doubts whether programs were within the category of "writing of an author" in the Constitutional sense. It is the burden of this paper that this doubt should now be confirmed.

Second, the Register's memo was issued during the infancy, or very young age, of the technology. It now should be much clearer what programs are and how they are used.

And third, it is obvious that the industry, faced with a choice between secrecy and dissemination, as represented in the choice between trade-secrecy laws and copyright, has overwhelmingly opted for the former; and such registration and notice-filing as has taken place has been in the nature of bet-hedging. From 1964 to January 1, 1977, only 1205 programs had been registered (and two companies, IBM and Burroughs, accounted for 971 of those). According to International Computer Programs, Inc., which publishes a newsletter on the programming industry, something in the order of 1,000,000 programs are developed each year (taking into account revisions of existing programs so radical as to make them new programs). There are roughly 300,000 programmers in the United States who spend at least part of their time developing new programs. These figures show how miniscule has been the response to the Register's memo. The Subcommittee Report (p. 12) attaches significance to the fact that numerous general-purpose programs have borne copyright notices; it should be fairly obvious that this practice, also, has been a matter of bet-hedging, reflecting the industry's uncertainty about future legislation.

4. The Preemption Argument

The recent CONTU staff memorandum, "Preemption of State and Common Law Protection for Works Subject to Copyright Protection," concludes that in spite of the preemption clause of the new copyright act (and, by the same reasoning, in spite of the added stricture on preemption with respect to computer programs proposed by the Software Subcommittee), "it appears that the availability of trade-secret protection for computer programs will not be disturbed by the . . . new copyright law. Rather, the difference in protection

offered by trade-secret law and copyright, along with the current judicial trend towards recognizing comity between state and federal authority unless absolutely barred by a strict interpretation of federal regulatory legislation, indicates that trade-secret protection for computer programs can co-exist with copyright."

5. The Whitford Committee Argument

The Software Subcommittee relies (p. 2, fn. 2) on an agreeing conclusion of the so-called Whitford Committee, in Great Britain. It should be noted that other inquiries have come to quite different conclusions. The World Intellectual Property Organization (WIPO), an agency of the United Nations, is devising a model form of registration for computer programs which combines features of patent and copyright law. A recent Consumer and Corporate Affairs study in Canada, reflecting the opinion of the Canadian Economic Council, concluded (April, 1977) that computer programs could not be protected by copyright "without copyright principles being twisted beyond recognition." There have been many studies on this issue, and different proposals, reflecting widespread uncertainty as to the best course, have been made. Examples of these are cited in a CONTU staff paper, "The Software Issue."

6. Political Expediency Argument

It is argued that efforts to get a national fair-trade law through Congress, with adequate and uniform trade-secrecy provisions, have dismally failed, and that therefore the chances of getting through a new computer-protection law would be slight. But it is clear that CONTU has a duty to find and recommend what is right and proper, not what is expedient. It was precisely because CONTU would be outside politics and beyond lobbying pressures that Congress passed this issue on to the Commission.

7. Legislative Intent Argument

"A reading of the Act of 1976 and consideration of its legislative history," the Report says (p. 7), "indicates that it was Congress' intent that computer programs be within its ambit." Is this intent so clear? It is true that in several places in the legislative reports there are sprinklings of references to computers. But the explicit language of both House and Senate Reports on Section 117, explaining why the computer question was turned over to CONTU, said, "It has become increasingly apparent that in one major area the problems are not sufficiently developed for a definitive legislative solution. This is the area of computer uses of copyrighted works: the use of a work 'in conjunction with automated systems capable of storing, processing, retrieving, or transferring information.'" Are computer programs "copyrighted works"? The only authority for considering them potentially so is the Register's letter of 1964--itself hedged, as we have noted, with doubt. The very fact that Congress threw up its collective hands and turned the computer issue over to CONTU indicates that the intent was cloudy, at the very least. And surely the Commission must take a full view of its assignment, and if it finds that the half-formed intent of Congress was mistaken, it has a duty to say so.

## A VIABLE ALTERNATIVE

Attached to this paper is a tentative draft of a statute for the protection of computer software. It is tentative, is not without drawbacks, and is in short not perfect; but it does have certain important values.

1. Neutral Ground

The Software Subcommittee Report (p.6) says, "Many proposals for

new forms of protection are in most respects indistinguishable from copyright." This statute is different from copyright in one essential, and the essential, respect: It is drawn specifically to protect both the expression (appropriate to copyright) and the innovative ideas (appropriate to patent) involved in the creation of computer programs. This is exactly appropriate for something that is both a writing and a mechanical device.

Such a statute, designed to secure something that is sold or leased as both of these, establishes a reserved territory between copyright and patent, which has aspects of both but is neither.

2. Term. The proposed term, ten years, is far more suitable for computer programs than the much longer term of protection of the copyright law. The effect of this term would be to give an innovative developer an edge on competitors, but not for so long as to deny to the public the cumulative worth of the inherent knowledge involved. If the balance between encouragement of innovation and public access were thought to be too favorable to one or the other, the term could be accordingly, and with ease, shortened or lengthened.

3. Flexibility. The statute has the great virtue of simplicity and of flexibility for the future. The instrument being developed by WIPO, mentioned above, seems to have become excessivly complicated and overly technical; this draft suggests that a much "cleaner" law may be possible. Since changes in technologies for operating computers are bound to have more far reaching and wrenching consequences than changes in the technologies of conventional copyrighted works, it would be greatly advantageous to have a new law covering the peculiar matters of substance in the former. Mandatory public reviews -- once a decade, perhaps -- might be built into the statute, rather than, as is proposed by the subcommittee,

jamming this fast-changing monster into the rigid framework of copyright.

4. The Vital Distinction. This statute places the protection of an essentially industrial and commercial article where it belongs, and it avoids the pollution of copyright by mechanical devices.

Why does this matter? Proponents of copyright for computer programs say that it is a matter of semantics whether one calls a form of protection "copyright" or "beanbag." They reason that if the characteristics of protection are somewhat similar to those provided writings under copyright, it would be wiser to bend the copyright law than to devise a separate statutory scheme to provide the desired protection.

But the entitlement of computer programs to copyright would set a radical precedent. For the first time, copyright would protect a device which is capable of "communicating" only with machinery -- thus equating machines with human beings as the intended recipients of the distribution that copyright was designed to foster.

Surely it is especially vital, in a time of a hurtling and insatiable technology, that the Nation's laws reflect, whenever possible, a distinction between the realm and responsibility of human beings and the realm and responsibility attributed to machines. This statute would help to do that.

# COMPUTER SOFTWARE PROTECTION ACT

This Act has been prepared at the request of Commissioner John Hersey as an alternative to the proposals contained in the Report of the Software Subcommittee of the National Commission on New Technological Uses of Copyrighted Works.

## § 1. Registry of Computer Software

There is hereby created within the Department of Commerce the Registry of Computer Software, which will receive and register computer software products in which rights are asserted under the provisions of this Act.

## § 2. Definitions

As used in this Act, the following terms are defined as here set forth:

A "Computer" is a machine or device capable of storing, processing, retrieving or transferring information.

"Computer software" is a computer program and all accompanying documentation.

A "Computer program" is a set of machine directions designed to control the operations of a computer in order to obtain a desired result.

"Accompanying documentation" is that material, including flow charts, diagrams, lists of individual operating steps of a program, and written manuals explaining or describing the function, operation and maintenance of a program, which is supplied by a vendor or supplier of computer software along with the program itself.

## § 3. Protected Subject Matter

(a) Protection may be obtained under the provisions of this Act for computer software which is the product of original intellectual effort,

produced in any form or medium, and which includes as one of its compone elements a computer program capable of interacting directly with a computer to control its operations in order to obtain a desired result.

(b) In no case does the protection afforded by this Act extend to any element of computer software which is merely the embodiment of a mathematical relationship or scientific principle.

§ 4. Exclusive Rights In Computer Software

The lawful proprietor of computer software under the provisions of this Act has the exclusive right to do and authorize the following:

(1) to reproduce the software in whole or substantial part, including any original method or process embodied in the software, in any medium;

(2) to distribute copies of the software, in whole or substantial part, to the public by sale or lease;

(3) to use the software, in whole or substantial part, to operate a computer.

§ 5. Ownership of Computer Software

(a) The following parties are entitled to ownership of the exclusive rights in computer software granted under the provisions of this Act; subject to the provision of section 4(b) of this Act.

(1) the independent creator, or in the case of products created jointly by two or more individuals, creators, are entitled to ownership of the software;

(2) in the case of software created by an employee within the scope of his or her employment, the employer is entitled to ownership of the software.

(3) in the case of software specially ordered or commissioned, the individual or entity at whose behest the software is created is entitled to ownership of the software;

(b) In determining ownership of exclusive rights in computer software under the provisions of this Act, the United States Government is entitled to protection as an employer or in commissioning work on the same basis as any private person or organization.

(c) The ownership of exclusive rights in computer software under the provisions of this Act, including initial entitlement thereto, may be transferred in whole or in part by contract and may descend according to testamentary disposition or applicable laws of intestate succession.

(d) The ownership of exclusive rights in computer software protected under the provisions of this Act is separate and distinct from the ownership of any material object in which the software is embodied. Transfer of a particular copy or copies of software does not, in the absence of specific agreement, entitle the transferee to exercise the exclusive rights in software granted by section 4 of this Act.

§ 7. Term of Protection

(a) The exclusive rights granted by section 4 of this Act shall endure for a period of ten years, which period shall terminate in all events on the last day of the 10th calendar year in which protection extends, beginning at the earliest of the following occurrences:

(1) the computer software is first used, other than for the purpose of developing and testing, in the operation of an electric data processing machine under authority of the owner;

(2) the computer software is first made available, by sale, lease, or otherwise, to any members of the public under authority of the owner.

§ 8. Preemptive Affect of Protection

(a) All legal or equitable rights that may be asserted in computer software created after (effective date of law) are the exclusive product of this Act, subject only to the following exceptions:

(1) Rights in accompanying documentation may be secured under the Copyright Act, Title 17 of the United States Code; and can coexist with protection under the provisions of this Act.

(2) Trademark protection, either at common law or under the provisions of the Lanham Act, 15 U.S.C.

§§ 1051-1127 et seq., may be secured for computer software, and can coexist with protection under the provisions of this Act.

No other exclusive rights may be asserted in computer software, whether under federal legislation or state statutory and common law, outside the provisions of this Act.

(b) All rights in computer software created prior to (effective date of law) are to be determined according to all federal, state and common law applicable prior to the effective date of this Act.

§9. Notice

Any program or separate component of accompanying documentation constituting a portion of a software product in which protection under the provisions of this Act is sought must contain a visually perceptible notice placed on or attached to the software component in a conspicuous location so as to give reasonable notification of the claim of ownership in the software. All reproductions of software components created under authority of the owner must contain the notice required by this section. Notice must consist of the following elements:

(1) The words "software protection," the abbreviation "Soft.", or the symbol "Ⓢ"; and

(2) The name of the owner of the computer software, or an abbreviated designation by which the owner can be recognized.

(3) The year in which the term of protection initially vests, as defined by section 7 of this Act.

( ) . Error in Notice.

(a) The omission of or error in the content or placement of notice required by section 9 of this Act on computer software products distributed under authority of the owner does not invalidate the protection available under the provisions of this Act.

(b) No liability for monetary damages or equitable compensation will be incurred for unintentional violations of an owner's exclusive rights in software which result from an innocent violator being reasonably misled by the absence of proper notice from software in which protection is claimed under the provisions of this Act. In determining the absence of liability, a court shall consider whether a violator had access to sufficient information on the software product in question to identify the actual owner, or be directed to accessible registration records maintained at the Registry of Computer Software which would disclose the identity of any party claiming exclusive rights in the software under the provisions of this Act.

(c) A court may grant injunctive relief under the provisions of section 14(a) of this Act against one innocently misled by the absence of proper notice under the standards of subsection (b) of this section, or in the alternative may, in its discretion and in order to prevent hardship to an innocent violator who has incurred substantial investment in activity in violation of exclusive rights granted by this Act, condition continued violations upon the payment to the actual owner of software of a reasonable royalty.

§11. Registration

(a) The owner of any computer software product shall, as a condition to protection under the provisions of this Act, register the claim by providing the Registry of Computer Software, with the following:

(1) an application form prescribed by the Secretary of Commerce; and

(2) a registration fee prescribed by the Secretary of Commerce; and

(3) one complete copy of the computer software, including the program and accompanying documentation.

(b) The Secretary of Commerce is authorized to prescribe by regulation the required contents of the application form required by subsection (a)(1) of this section and the registration fee required by subsection (a)(2) of this section. The Secretary may also permit, by regulation, the provision of identifying, descriptive material in lieu of the computer program in order to avoid the imposition of practical or financial hardship on the Registry of Computer Software or the registrant.

(c) The Secretary of Commerce shall, upon receipt of a proper claim for registration as governed by subsection (a) of this section, register the claim and issue the registrant a certificate of registration for computer software. That certificate shall constitute prima facie evidence of the facts set forth in the application for protection required by subsection (a)(1) of this section, admissible in any action to enforce rights in such registered software brought under the provisions of this Act.

(d) The failure to include individual components of the accompanying documentation required for registration under subsection (a) of this section will not invalidate the registration. Provision to the Registry of Computer Software of any such components may be compelled by order of the Secretary of Commerce, or by any party challenging the rights claimed by an owner of computer software in a civil action brought under the provisions of this Act.

(e) No action to enforce rights granted under the provisions of this Act may be instituted until registration for the computer software in which rights are being asserted is made in accordance with this section and no rights will be enforced unless registration in accord with this section was completed at the time of the allegedly infringing acts. In any case where a proper application form, fee and copy of the computer software have been provided the Registry of Computer Software, but registration has been denied, the applicant may join the Secretary of Commerce in an action to enforce rights under the provisions of this Act, and proceed to assert the jurisdiction of the federal courts provided by section 13 of this Act for all alleged violations occurring after registration was proferred.

§12 Recordation of Transfers

(a) Transfer of ownership of any of the exclusive rights in computer software granted by section 4 of this Act may be recorded in the Registry of Computer Software. In order to obtain such recordation, the claimant of such rights must provide the Registry of Computer Software with the following:

(2) a recordation form prescribed by the Secretary of Commerce for the purpose of recording transfers of rights in computer software; and

(3) a recordation fee prescribed by the Secretary of Commerce.

(b) The Secretary of Commerce is authorized to prescribe by regulation recordation forms required by subsection (a)(2) of this section and the recordation fee required by subsection (a)(3) of this section.

(c) The Secretary of Commerce, shall, upon receipt of a proper claim for recordation of a transfer of ownership in computer software protected under the provisions of this Act, record the claim and issue the claimant a certificate of recordation. That certificate shall constitute prima facie evidence of the facts set forth in the application for recordation, admissible in any action to enforce rights in registered software brought under the provisions of this Act.

(d) No action to enforce rights asserted by the transferee of the initial registrant of rights in computer software may be instituted until recordation of the transfer is made in accordance with this section.

§13. Jurisdiction over Civil Actions

Jurisdiction over any cause of action to enforce rights granted under the provision of this Act lies exclusively in the federal district courts.

§14. Remedies for Infringement

(a) The owner of any of the exclusive rights granted under the provisions of this Act may obtain injunctive relief to prevent the violation of any of these exclusive rights, subject to the discretionary authority vested in the courts by section 10(c) of this Act. Any injunction awarded to enforce these rights shall be operative throughout the United States and all territories and possessions subject to its laws, and may be enforced by proceedings in contempt. As part of the injunctive relief, a court may seize and dispose of any materials found to violate exclusive rights asserted in software.

(b) The owner of any of the exclusive rights granted under the provisions of this Act is entitled to money damages for the actual damages incurred as a result of infringement of rights protected under this Act, and to any additional profits lost as a result of such infringement.

(c) The successful party in a cause of action brought under the provisions of this Act is entitled to recover the costs of the action, and may also recover, at the discretion of the court, a reasonable attorney's fee.

§15. Limitation of Actions

No cause of action may be maintained under the provisions of this Act unless it is commenced within three years after the claim accrued.

§16. Authorization to Promulgate Rules

The Secretary of Commerce is authorized to establish rules and regulations consistent with the provisions of this Act for the administration of the Registry of Computer Software.